CLAIMS:

1. A storage medium for the optical storage and retrieval of information, the storage medium comprising:

a substrate,

an active layer for retention of data,

the active layer being provided with a pre-determined pattern of bit positions.

2. A storage medium as claimed in claim 1, characterized in that the substrate is provided with the pre-determined pattern of bit positions.

3. A storage medium as claimed in claim 1 or 2, characterized in that the pre-determined pattern comprises a two-dimensional strip of bit positions.

4. A storage medium as claimed in claim 1 or 2, characterized in that the pre-determined pattern comprises an at least partial quasi-hexagonal or quasi-square pattern.

5. A storage medium as claimed in claim 1 or 2, characterized in that the scaled distance d_c^* between centers of the bit positions is less than 0.84, preferably less than 0.63.

6. A storage medium as claimed in claim 1 or 2, characterized in that the scaled distance d_{al}^* between the active layer at a first bit position and the active layer at an adjacent bit position is less than 0.42, preferably less than 0.3.

7. A method of manufacturing a storage medium for the optical storage and retrieval of information, the method comprising the following steps:

a substrate is provided with a pre-determined pattern of bit positions,

an active layer for retention of data is provided substantially at the location of the bit positions.

8. A method of manufacturing a storage medium as claimed in claim 7, characterized in that a pressing tool is employed to generate the pre-determined pattern of bit positions.

9. A method of manufacturing a storage medium as claimed in claim 8, characterized in that a two-dimensional strip of bit positions in the form of a spiral is provided on the substrate.

10. A method of manufacturing a storage medium as claimed in claim 7 or 8, further comprising the step of providing a mirror layer between the substrate and the active layer.

11. A method of manufacturing a storage medium as claimed in claim 7 or 8, further comprising the step of providing a thermally insulating layer between the active layer at a first bit position () and the active layer at an adjacent bit position ().

12. A record carrier having information written thereon, characterized in that the information is coded in an active layer provided by a method of manufacturing as claimed in claim 7 or 8.

13. A record carrier as claimed in claim 12, characterized in that the record carrier is an optical disc.

AMENDED CLAIMS

[received by the International Bureau on 20 April 2004 (20.04.2004);
original claims 1-13 replaced by new claims 1-11 (2 pages)]

1. A storage medium for the optical storage and retrieval of information, the storage medium comprising:

a substrate (1),

an active layer (2, 2', ...) for retention of data,

the active layer (2, 2', ...) being provided with a pre-determined pattern (4) of bit positions (14, 14', ...),

the substrate (1) being provided with the pre-determined pattern (4) of bit positions (14, 14', ...) for reducing cross talk between adjacent bit positions.

2. A storage medium as claimed in claim 1, characterized in that the pre-determined pattern (4) comprises a two-dimensional strip of bit positions (14, 14', ...).

3. A storage medium as claimed in claim 1 or 2, characterized in that the pre-determined pattern (4) comprises an at least partial quasi-hexagonal or quasi-square pattern.

4. A storage medium as claimed in claim 1 or 2, characterized in that the scaled distance d_c* between centers of the bit positions 14, 14', ... is less than 0.84, preferably less than 0.63.

5. A storage medium as claimed in claim 1 or 2, characterized in that the scaled distance d_{al}* between the active layer at a first bit position and the active layer at an adjacent bit position is less than 0.42, preferably less than 0.3.

6. A method of manufacturing a storage medium for the optical storage and retrieval of information, the method comprising the following steps:

a substrate (1) is provided with a pre-determined pattern (4) of bit positions (14, 14', ...),

an active layer (2, 2', ...) for retention of data is provided substantially at the location of the bit positions (14, 14', ...),

a two-dimensional strip of bit positions (14, 14', ...) in the form of a spiral being provided on the substrate.

7. A method of manufacturing a storage medium as claimed in claim 6, characterized in that a pressing tool is employed to generate the pre-determined pattern (4) of bit positions (14, 14', ...).

8. A method of manufacturing a storage medium as claimed in claim 6 or 7, further comprising the step of providing a mirror layer (16) between the substrate and the active layer.

9. A method of manufacturing a storage medium as claimed in claim 6 or 7, further comprising the step of providing a thermally insulating layer (17) between the active layer (2, 2', ...) at a first bit position () and the active layer at an adjacent bit position ().

10. A record carrier having information written thereon, characterized in that the information is coded in an active layer (2, 2', ...) provided by a method of manufacturing as claimed in claim 6 or 7.

11. A record carrier as claimed in claim 10, characterized in that the record carrier is an optical disc.